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Smaller, Faster VMC Reduces Cycle Times

Journeyman Machine's larger 50-taper machines were too slow for milling smaller parts with tapped holes, but a 40-taper KVR 4020A vertical machining center from Kent USA reduced cycle time by 30%.

[#casestudy](#)



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Every shop faces the same situation at one point or another: Their machine tools are either too large and slow to be competitive on smaller parts, or too small and underpowered for the larger parts. This was the case at [Journeyman Machine and Supply Co. Inc.](#) when shop supervisor Andy Hass and the company's owners agreed that it was time to think small.

“In the past, we’ve always traded in our old machines and replaced them with new ones of comparable size and capabilities,” Mr. Hass says. “This time, though, we felt it made more sense to invest in a smaller, faster machine. The rapid travels and tool changes on our large 50-taper machines were just way too slow for machining retainer plates, clips and various other parts with small tapped holes.” The company ultimately settled on a 40-taper machine from [Kent USA](#) that provided higher spindle speeds and through-spindle coolant supply.

Adapting to a Changing Customer Base

Journeyman Machine sits in a nondescript L-shaped building roughly two miles southwest of Lake Winnebago in Fond du Lac, Wisconsin. In 1976, founder Mike Lambeseder decided to open the small machine shop to serve the area's railroad industry. He and a few others there made replacement parts, repaired equipment for local farmers, and gradually took on an increasing amount of production work until the day Mr. Lambeseder retired and sold t



Shop Foreman Andy Hass (left) stands next to Jason Davies, president of Journeyman Machine and Supply Co. Behind them is a new Kent KVR 4020A vertical machining center.



business to current owner and have continued to build the capacity, earning a reputation shop offering quality and cost



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owner Ken Wagner
10,500-square-foot
customer-oriented job

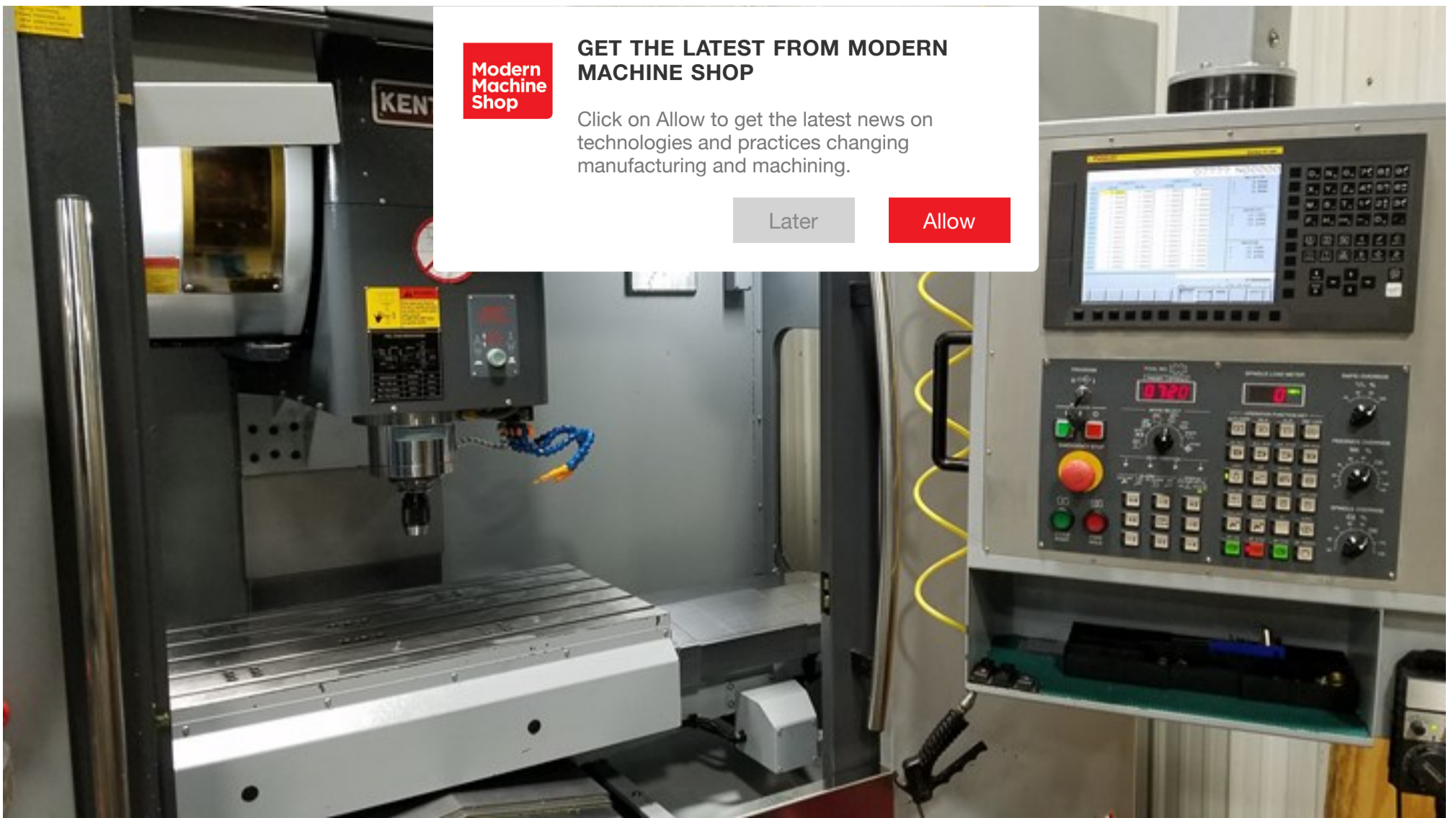
But the company services are different, more customer-oriented, than it did more than 40 years ago. The production work has largely dried up, and Journeyman Machine produces an eclectic mix of prototype and low-volume part, fixture and other tooling jobs for the marine industry, machine tool builders, food and beverage customers, and custom machinery manufacturers. These include stainless steel bearing holders with 0.0005-inch tolerances, as well bracket holders with multiple pockets, angles and holes, the majority of which were bound for the new Kent machine.

Evolving Machine Technology

Mr. Hass has been at the shop through most of these changes. He came on board in 1986, shortly after Journeyman Machine bought its first CNC machine tool, and notes that the company has evolved greatly since then. He's watched as machinery riggers hauled the shop's old Gisholt turret lathes and Kearney & Trecker mills out the shipping door, replacing them with a handful of large to medium-size CNC lathes and vertical machining centers. In fact, even though the shop already had a 40-taper, 24- by 16-inch VMC, it was primarily used for secondary operations and light milling work. A faster, more capable 40-taper machine was needed.

The shop reached out to Jeff Luth of Luth Machinery Sales. "He's been in the machine tool business since the 1970s and knows all the people, all the major brands," Mr. Hass says. "In fact, I'm pretty sure we bought practically every piece of CNC equipment in this place through him, so we trust his judgment." Mr. Luth recommended that they visit a local shop to take a look at a Kent CNC machine. It was a convincing visit.





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When Journeyman Machine needed a fast and accurate 40-taper machine for its smaller parts, the owners turned to Kent Machinery. Whereas the shop's philosophy had usually been to replace old machines with models of around the same size or larger, a gradual shift away from production work indicated the shop should think smaller and faster.

Journeyman took delivery of its Kent USA KVR-4020A vertical machining center in November of 2018. The 40- by 20-inch machine has a chilled, 15-horsepower, 10,000-rpm spindle, a 24-tool double-arm automatic toolchanger (ATC) and a FANUC Oi-MF control. Mr. Hass says he is happy with the package they put together which included other “out-of-the-box” features such as a belt-style chip conveyor, a 1,000-psi ChipBlaster, tool length measurement, a fully loaded control with 400-program storage and 200-block lookahead.

Benefits Big and Small

The new technology has been a game changer for Journeyman Machine in a number of ways, Mr. Hass says. Using the high-pressure coolant-through capability together with solid carbide drills, he says the KVR makes holes “about as fast as a punch press.” He milled a lot of steel and stainless steel since the shop received the new machine, but the KVR really shined on a recent 80-piece aluminum repeat job, where the 10,000-rpm spindle, faster rapid traverse rates, and 1.3-second tool changes reduced the cycle time by more than 30%.

While metal removal capability and machine accuracy are important factors when considering a new machine tool, Mr. Hass says he has been equally impressed with the little things that Kent included with the machine. The KVR is equipped with coolant washdown and air-hose connections on the machine front for operator convenience. The communication cables were neatly routed, as was the electrical connection, making the machine hookup about half an hour. The fourth-axis prewire, automatic oil skimmer, dual LED work lights, and other machine features made the KVR installation relatively easy, and its use since then both reliable and predictable.



“We were quite impressed with the leveling pads and screws with no problems at all with integration with programming. We were working on writing, the shop just received new machines. “A lot of steel gets delivered every day to the various industrial parks around here, which is why it’s so important to keep updating our equipment,” Mr. Hass adds. “I expect that Kent will be a part of that for a long time to come.”



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7 included. Even the says. “There were no were there any challenges usually, at the time of e one of its old 50-taper

